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United States
Department of
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Soil
Conservation
Service

Spokane,
Washington

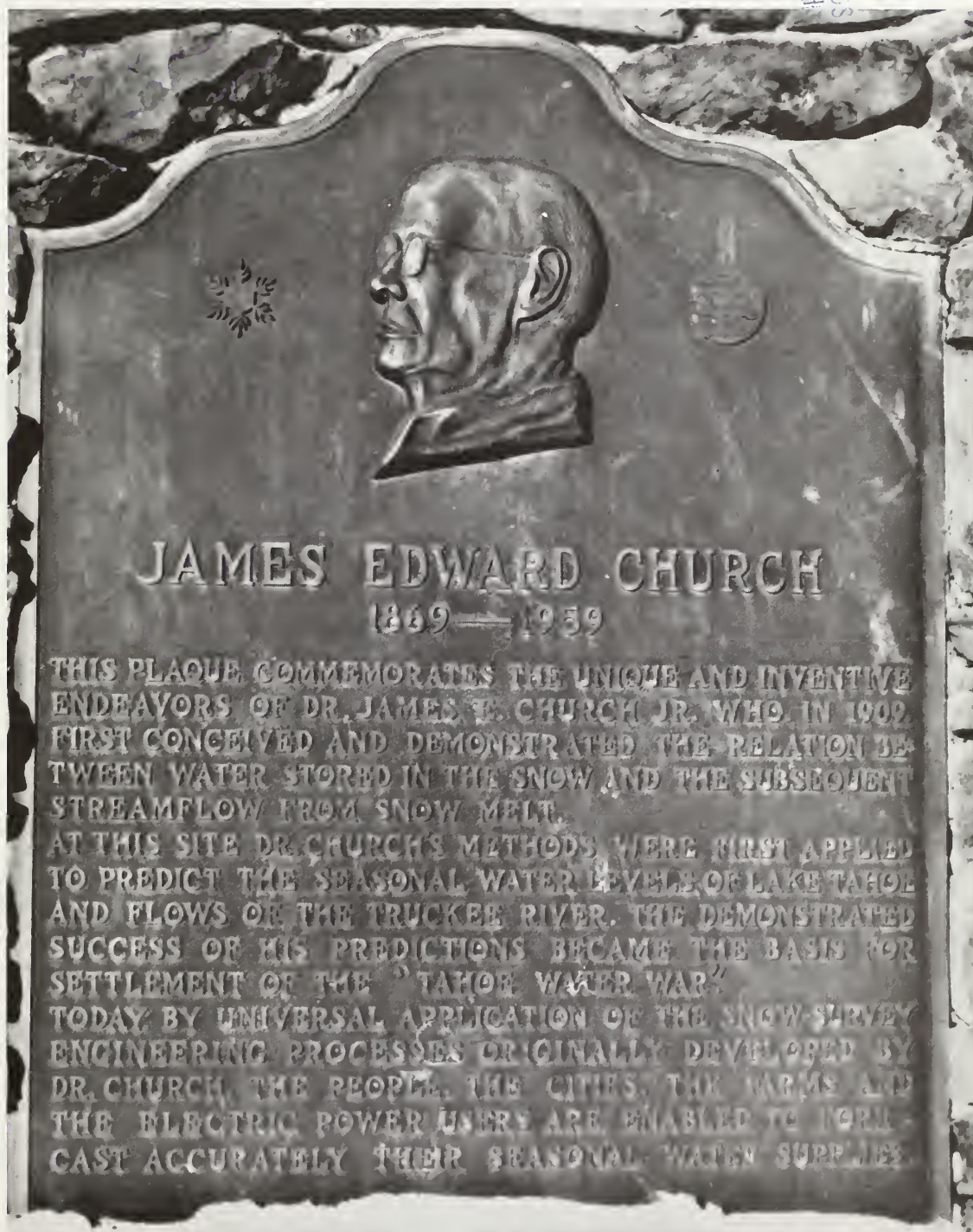


Washington Water Supply Outlook

APRIL 1, 1989

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Foreword

How Forecasts Are Made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply outlook conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via radio telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

An error is associated with each forecast, and this error decreases as the season progresses and more data becomes available. To express the range of error that can be expected, "most probable" forecasts are issued along with a range representing a "reasonable minimum" and a "reasonable maximum". Actual streamflow can be expected to fall within this range in eight out of ten years. Additionally two specific scenarios are provided based on the assumption that subsequent precipitation will be "wet", above average, or "dry", below average.

For More Information

Copies of Monthly Water Supply Outlook Reports and other reports may be obtained from the states listed below. An annual snow survey data summary is published by the Soil Conservation Service for each of the western states. Historical snow survey data may be obtained at those same offices.

STATE	ADDRESS
Alaska	201 East 9th Ave., Suite 300, Anchorage, AK 99501-3687
Arizona	201 East Indianola Ave., Suite 200, Phoenix, AZ 85012
Colorado	2490 West 26th Ave., Building A, 3rd floor, Denver, CO 80211
Idaho	3244 Elder Street, Room 124, Boise, ID 83705
Montana	10 East Babcock, Room 443, Federal Building, Bozeman, MT 59715
Nevada	1201 Terminal Way, Room 219, Reno, NV 89502
New Mexico	517 Gold Ave. S.W., Room 3301, Albuquerque, NM 87102-3157
Oregon	1220 Southwest 3rd Ave., Room 1640, Portland, OR 97204
Utah	4402 Federal Building, 125 South State Street, Salt Lake City, UT 84147
Washington	W. 920 Riverside, Room 360, Spokane, WA 99201-1080
Wyoming	Federal Building, 100 "B" Street, Room 3124, Casper, WY 82601

In addition to state reports, a Water Supply Outlook for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.

Water supply reports published by other agencies:

California — Snow Survey Branch, California Department of Water Resources, P.O. Box 388, Sacramento, CA 95802; British Columbia — The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory — Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A3V1; Alberta, Environment Technical Services Division, 9820 106th St., Edmonton, Alberta T5K 2J6.

Washington Water Supply Outlook

and

Federal — State — Private
Cooperative Snow Surveys

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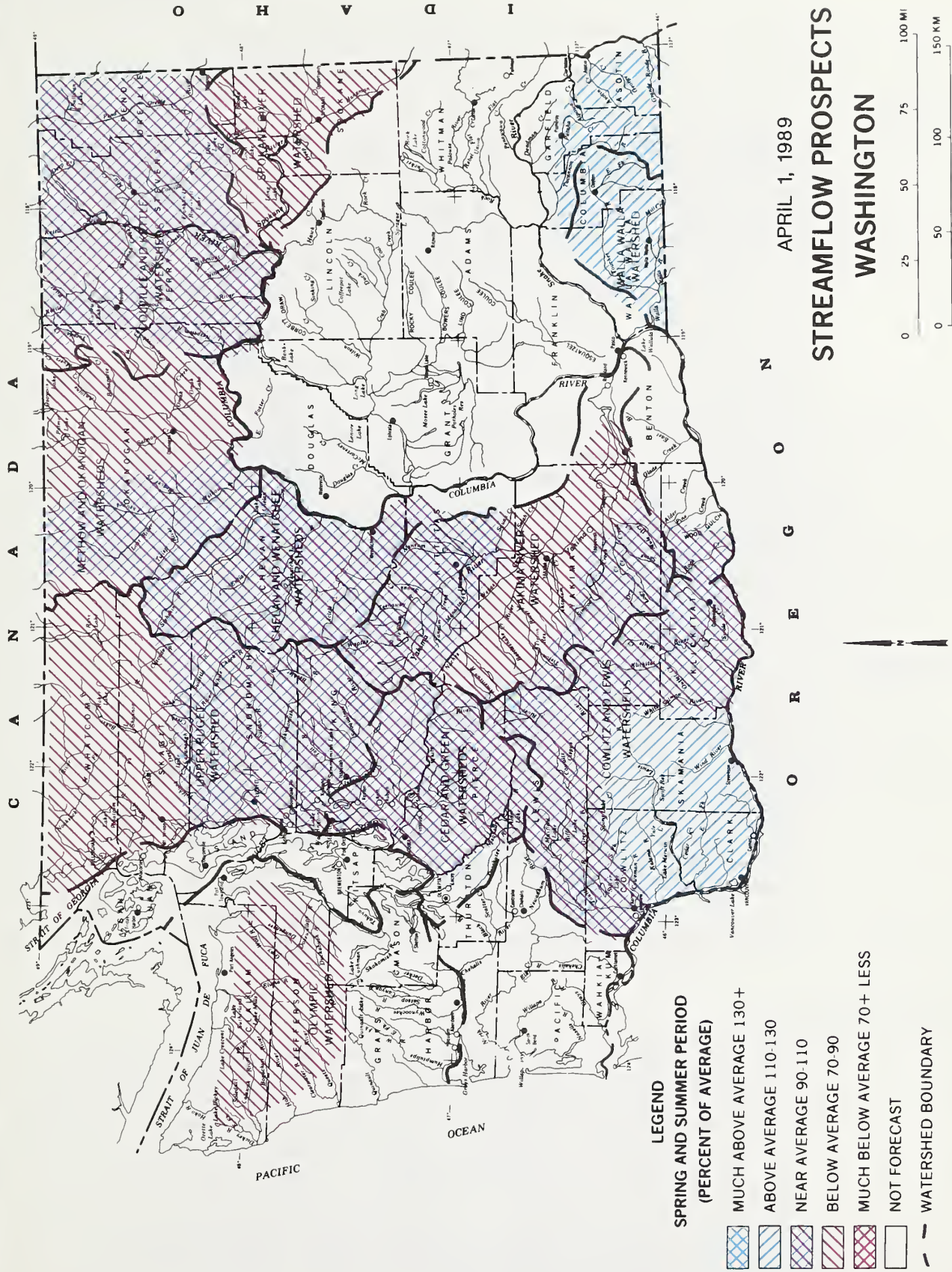
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TABLE OF CONTENTS

STATE STREAMFLOW PROSPECTS MAP	1
STATE GENERAL OUTLOOK	2
BASIN OUTLOOK AND CONDITIONS	
SPOKANE	4
COLVILLE AND PEND OREILLE	6
OKANOGAN AND METHOW	8
WENATCHEE AND CHELAN	10
YAKIMA	12
WALLA WALLA	14
COWLITZ AND LEWIS	16
WHITE - GREEN	18
NORTH PUGET SOUND	20
OLYMPIC	22
SNOW DATA	24



SOURCE: Data compiled by SCS
Field Personnel

GENERAL OUTLOOK

SUMMARY:

SNOWPACK, AS A PERCENT OF NORMAL, INCREASED OVER THE STATE AND VARIED FROM 113% IN THE WALLA WALLA TO 85% IN THE OLYMPIC BASIN. RUNOFF FOR 1989 IS FORECASTED TO BE AVERAGE OVER MOST OF WASHINGTON. THESE FORECASTS VARY FROM 117% ON THE LEWIS RIVER TO 82% ON THE YAKIMA RIVER. MARCH STREAMFLOWS VARIED FROM 57% OF NORMAL ON THE OKANOGAN RIVER TO 165% FOR THE WALLA WALLA RIVER. RESERVOIR STORAGE REMAINS BELOW NORMAL AT THE MAJOR IRRIGATION PROJECTS THROUGHOUT THE STATE, WITH THE RESERVOIRS IN THE YAKIMA BASIN 82% OF NORMAL. PRECIPITATION WAS ABOVE NORMAL OVER MOST OF WASHINGTON FOR MARCH WITH ONLY THE OLYMPIC WITH 97% BELOW AVERAGE AND THE WALLA WALLA WAS HIGH WITH 222%. TEMPERATURES VARIED DURING MARCH WITH THE GREEN THREE DEGREES BELOW NORMAL AND THE WALLA WALLA BASIN THREE DEGREES ABOVE.

NOTE: NEGATIVE TERMS THAT APPEARED IN THE MARCH REPORT WERE IN ERROR, THERE SHOULD BE NO DATA WHERE THE "-" IS SHOWN.

SNOWPACK:

Snowpack averages increased in most areas of Washington during March. The Cedar Basin at 123% of average was the best. Along the west slopes of the Cascade Mountains, the Lewis-Cowlitz Basin was 109% up from 96% and the Walla Walla Basin was 113%. The Eastern slopes of the Cascade Mountains are higher with the Yakima Basin at 94% up from 86% and the Chelan-Wenatchee at 92% of normal. Maximum snow cover is at the Paradise snow pillow with 82.9 inches of water content on the ground. This site normally would have 71.2 inches of water content.

PRECIPITATION:

SNOTEL sites in Washington showed the high elevation year-to-date precipitation values to be 95% of average, down from 96% last month. Precipitation was above normal over most of Washington for March. The Olympic was the only basin with below average precipitation at 97% of normal. Some of the above normal basins were the Spokane at 162%, the Colville-Pend Oreille at 165%, and the Chelan-Wenatchee at 121% of normal. Some values in the West Cascade Basins include North Puget at 118%, White-Green at 143% and the Lewis at 154%.

RESERVOIRS:

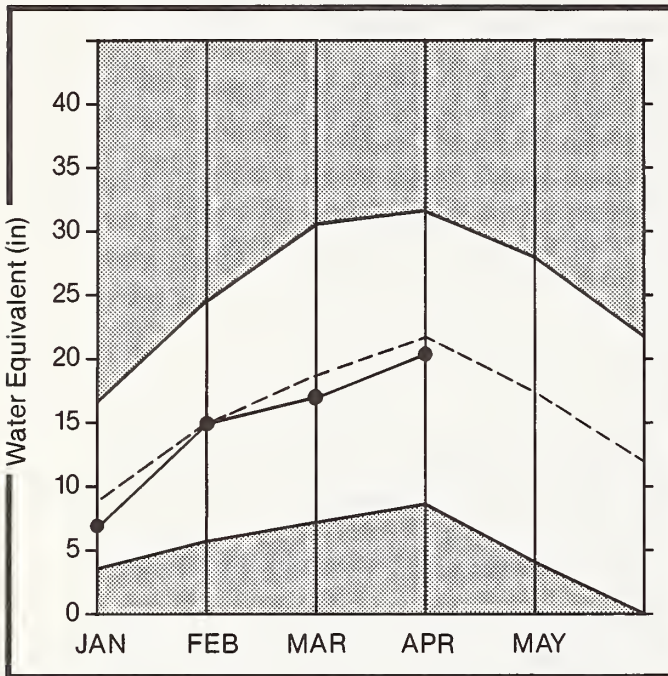
There was an overall improvement in the storage at major state reservoirs for April 1. Storage in the Yakima Basin was 605,600 acre feet, 82% of average, up from 542,600 acre feet, 78% of average. Other major reservoir storage include Roosevelt at 10% of normal, down from 36% last month. Banks Lake is at 114% and the Okanoqan reservoirs are at 99% of April 1 average. The power reservoirs contain the following: Coeur d'Alene Lake 243,200 acre feet 104% of normal, Chelan Lake 200,600 acre feet at 95%, down from 239,300 last month, and Ross Lake at 703,900 acre feet, 223% of average.

STREAMFLOW:

Near normal temperatures and low elevation rainfall during March increased the streamflow on streams in Washington. March streamflows were below normal in most areas of Washington. Streamflow varied from 57% on the Okanoqan River and the maximum of 165% from the Walla Walla River. On the west side of the Cascade Mountains, runoff from the Chehalis was 122% and the Skaqit 66% of normal. The eastern slope of the Cascades runoff on the Yakima was 71% of average. The Columbia River was 79% at the International Border and 88% below Priest Rapids. April 1 streamflow forecasts vary from 117% in the Lewis River to 82% in Yakima River. Forecasts for some west side streams include: Cedar River 100%, Skaqit River 88%, up from 83% last month and the Dungeness River 88%. Some east side streams include the Yakima River at Cle Elum 88%, the Methow River 95% and the Wenatchee River 95% up from 91% last month.

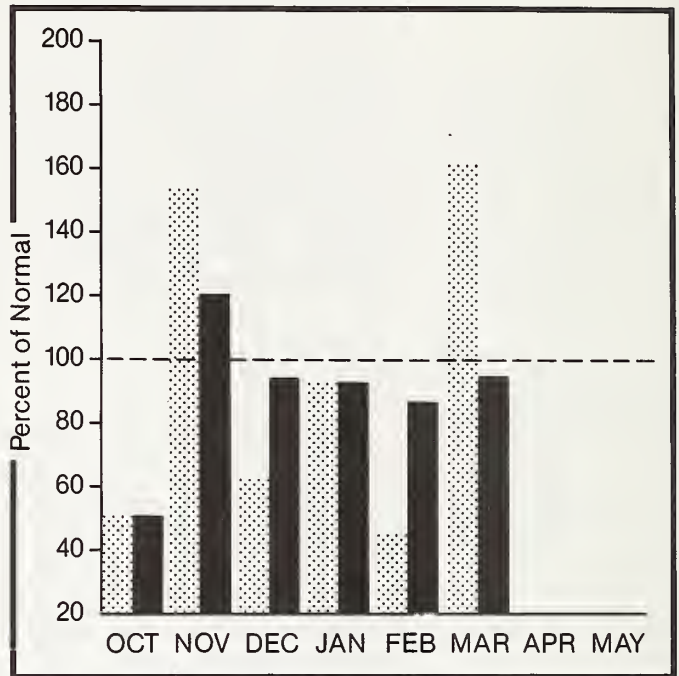
SPOKANE

Mountain snowpack* (inches)



*Based on selected stations

Precipitation* (percent of normal)

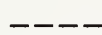


*Based on selected stations

Maximum



Average



Minimum



Current



Monthly precipitation



Year to date precipitation



SPOKANE RIVER BASIN

WATER SUPPLY OUTLOOK:

Precipitation for March was 162% of average. Maximum snow water again occurred at the Lost Lake snow course with 146 inches of snow with 47.3 inches of water content, April 1 average for this site is 59.3 inches. Forecasted runoff for the Spokane River Basin is 89% of normal for the coming spring and summer. This forecast is based on a snowpack 92% of average and a water year-to-date precipitation value 94% of normal. Streamflow during March on the Spokane River was 106% of average at Spokane. April 1 storage in Coeur d'Alene Lake was 243,200 acre feet compared to 220,900 last month; average storage in Coeur d'Alene for April 1 is 234,300 acre feet. Temperatures averaged one degrees below normal during March.

For more information contact your local Soil Conservation Service office.

SPOKANE RIVER BASIN

STREAMFLOW FORECASTS

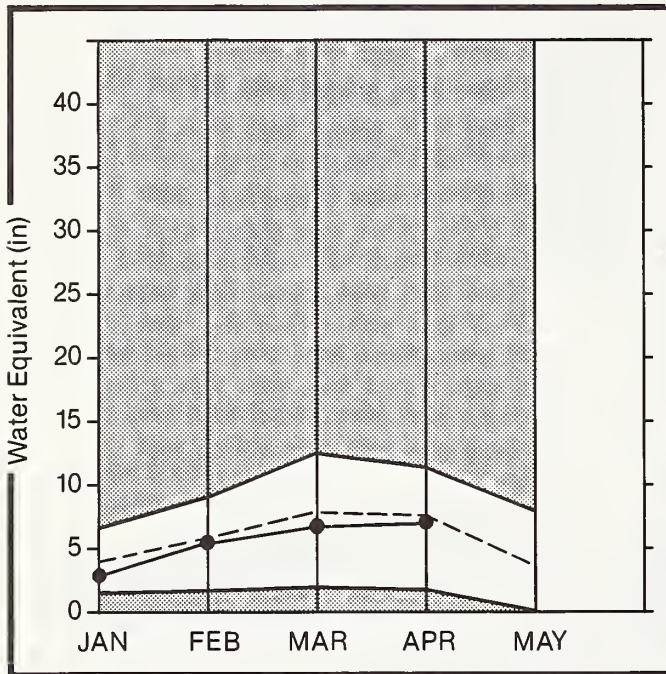
FORECAST POINT	FORECAST PERIOD	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)
		WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)	WET SUBS. (1000AF)
SPOKANE nr Post Falls (2)	APR-SEP	2510	89	2790	2230	3190	1830	2820
	APR-JUL	2420	89	2750	2090	3070	1770	2723
SPOKANE at Long Lake	APR-JUL	2710	89			3560	1860	3045

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE	USEABLE STORAGE	USEABLE STORAGE	WATERSHED	NO. COURSES	THIS YEAR AS % OF LAST YR. AVERAGE
		THIS YEAR	LAST YEAR	Avg.		AVG'D	
COEUR D'ALENE	291.2	243.2	194.2	234.3	Spokane River	19	140 98

WET SUBS. and DRY SUBS. represent 150 and 50 percent subsequent precipitation events respectively.
 REAS. MAX. and REAS. MIN. forecasts are for 10% and 90% exceedance levels with the exception of (1) below.
 (1) - REAS. MAX. and REAS. MIN. forecasts are for 5% and 95% exceedance levels.
 (2) - Corrected for upstream diversions or changes in reservoir storage.

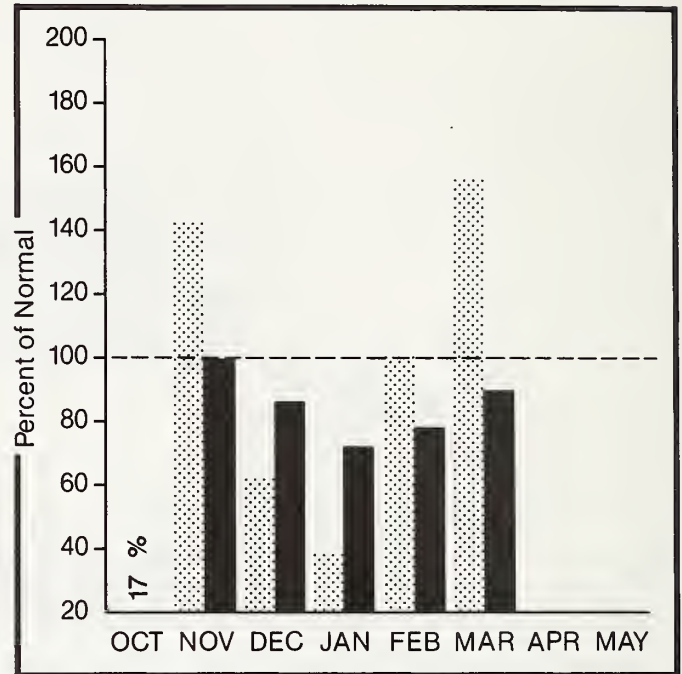
COLVILLE - PEND OREILLE

Mountain snowpack* (inches)



*Based on selected stations

Precipitation* (percent of normal)

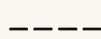


*Based on selected stations

Maximum



Average



Minimum



Current



Monthly precipitation



Year to date precipitation



COLVILLE - PEND OREILLE RIVER BASINS

WATER SUPPLY OUTLOOK:

Forecast for the Pend Oreille River streamflow is 98% of normal for the summer, this is an increase from 89% last month. The Colville River is forecast for 93% of normal for the summer runoff period. April 1 snow cover is 92% of normal on the Pend Oreille and Kettle and 98 % on the Colville. Snowpack at Bunchgrass Meadow snow course was 90 inches of snow with 29.4 inches of water. Precipitation during March was 165% of average, bringing the water year-to-date to 89% of normal. Streamflows for March were 77% of average on the Pend Oreille River, 71% on the Kettle River and 79% on the Columbia River at the International Border. Temperatures averaged near normal for March.

For more information contact your local Soil Conservation Service Office.

COLVILLE - PEND OREILLE RIVER BASINS

STREAMFLOW FORECASTS

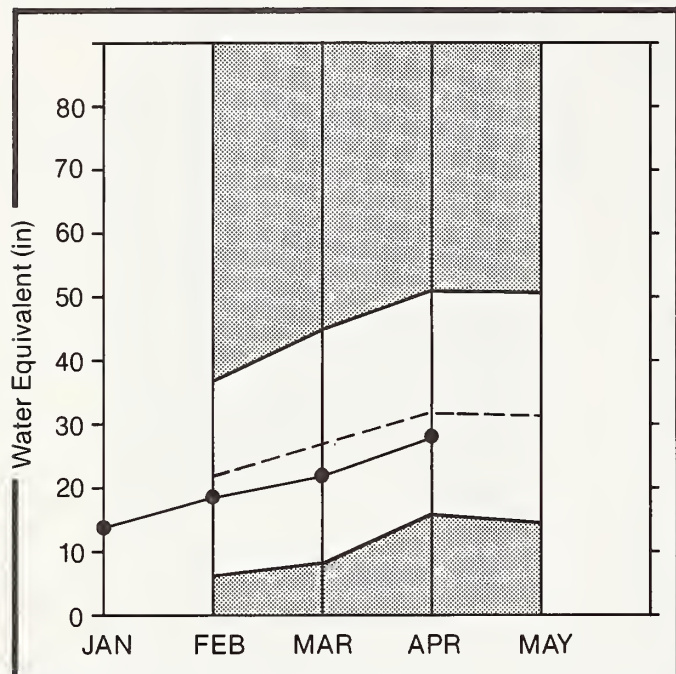
FORECAST POINT	FORECAST PERIOD	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
PEND OREILLE b1 Box Canyon (2)	APR-SEP	14800	98			17700	11900	15170
	APR-JUL	13600	98			16200	10800	13900
	APR-JUN	11700	98			14000	9430	11960
CHAMOKAME CK nr Long Lake	MAY-AUG	8.2	89			11.8	4.6	9.2
COLVILLE at Kettle Falls	APR-SEP	129	93			183	75	139
	APR-JUL	119	93			169	69	128
	APR-JUN	110	93			156	64	118
KETTLE nr Laurier	APR-SEP	1770	93			2280	1270	1907
	APR-JUL	1680	93			2170	1190	1807
	APR-JUN	1510	93			1950	1070	1622
COLUMBIA at Birchbank (2)	APR-SEP	42400	96			47700	37100	44390
	APR-JUL	33900	96			37800	29600	35440
	APR-JUN	24600	96			27200	21500	25650
COLUMBIA at Grand Coulee Dam (2)	APR-SEP	64000	96			72600	56000	66460
	APR-JUL	54100	97			60200	46900	55730
	APR-JUN	41700	96			47300	36900	43420

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR	LAST YEAR	AVG.	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR.	% OF AVERAGE
ROOSEVELT	5232.0	503.0	1715.5	1586.0	Colville River	3	133	98
BANKS	715.0	664.2	650.7	583.0	Pend Oreille River	12	121	92
					Kettle River	10	125	91

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 (2) - Corrected for upstream diversions or changes in reservoir storage.

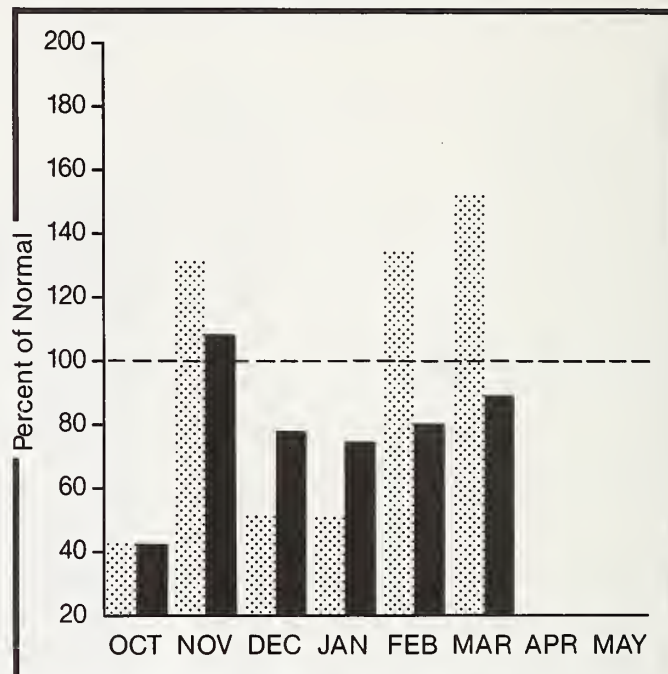
OKANOQAN AND METHOW

Mountain snowpack* (inches)



*Based on selected stations

Precipitation* (percent of normal)



*Based on selected stations

Maximum



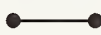
Average



Minimum



Current



Monthly precipitation



Year to date precipitation



OKANOQAN - METHOW RIVER BASINS

WATER SUPPLY OUTLOOK:

Storage in the Conconully Reservoirs is 14,900 acre feet, which is 64% of capacity and 99% of April 1 average. Summer runoff forecasted for the Okanogan River is 85% of normal, up from 76% last month. The Similkameen River 89%, up from 77% last month and the Methow River is 95% of normal. Okanogan River streamflow was at 57% of average for March while the Similkameen River averaged 65%. Snow cover, as of April 1, is 88% of average on the Okanogan-Methow Basin. This is based upon measurements made at 32 snow courses and SNOTEL sites. March precipitation in the Okanogan-Methow was 151% of normal, with water year-to-date 88% of average. Temperatures were two degrees above normal for the month. Maximum snow water occurred at the Harts Pass SNOTEL, elevation 6500 feet, with 42.9 inches of water.

For more information contact your local Soil Conservation Service office.

OKANOGAN - METHOW RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	HIST PROBABLE (1000AF)	HIST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
SINKHAMEEN R. nr Nighthawk	APR-SEP	1270	89	1430	1080	1630	910	1432
	APR-JUL	1180	89	1330	1010	1510	845	1333
	APR-JUN	1020	90	1120	850	1300	740	1128
OKANOGAN R. nr Tonasket	APR-SEP	1420	85	1820	1250	1980	855	1661
	APR-JUL	1280	85	1640	1130	1790	770	1501
	APR-JUN	1080	86	1370	940	1510	655	1255
METHOW RIVER nr Pateros	APR-SEP	935	95	975	790	1190	680	980
	APR-JUL	865	95	900	730	1100	630	907
	APR-JUN	740	96	765	615	940	540	769

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **	THIS YEAR	LAST YEAR	WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
CONCONULLY LAKE (SALMON)	10.5	8.0	7.4	8.0	Okanogan River	27	116 89
CONCONULLY RESERVOIR	13.0	6.9	6.0	7.0	Methow River	4	130 81

WET SUBS. and DRY SUBS. represent 150 and 50 percent subsequent precipitation events respectively.

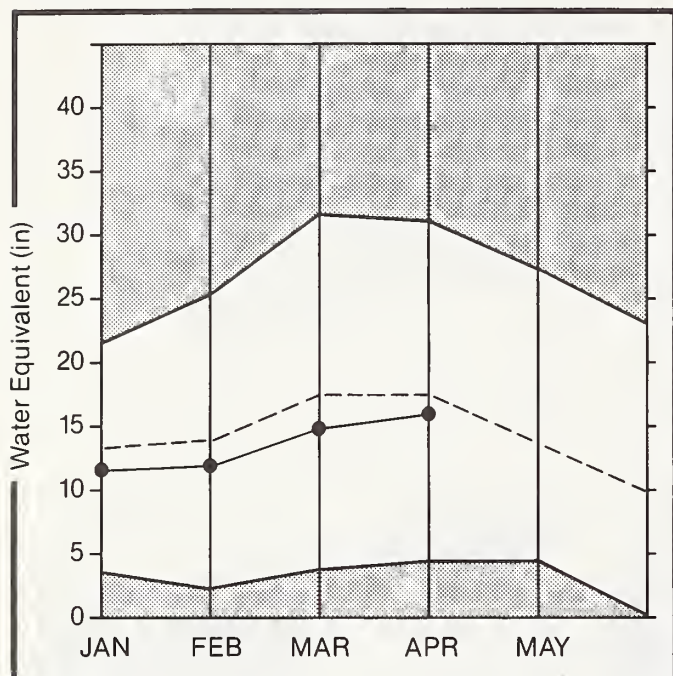
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(2) - Corrected for upstream diversions or changes in reservoir storage.

WENATCHEE AND CHELAN

Mountain snowpack* (inches)

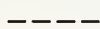


*Based on selected stations

Maximum



Average



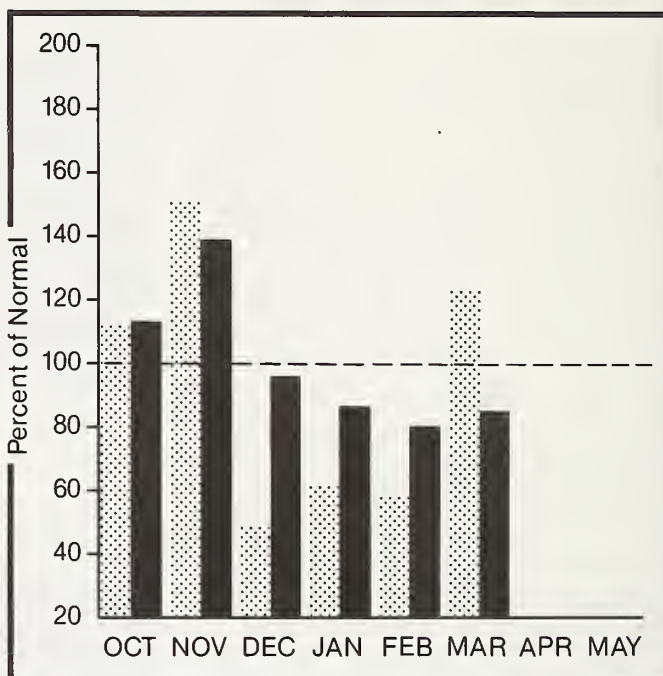
Minimum



Current



Precipitation* (percent of normal)

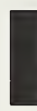


*Based on selected stations

Monthly precipitation



Year to date precipitation



WENATCHEE AND CHELAN RIVER BASINS

WATER SUPPLY OUTLOOK:

Snowpack in the Wenatchee-Chelan Basin is 93% of normal. Lyman Lake SNOTEL had the most snow water with 60.1 inches on April 1. Runoff for the Wenatchee River is forecast to be 95% of normal for the summer, up from 91% last month. Forecasts in the Chelan River are for 95% up from 87% last month. March streamflow within the basin was 58% of normal on the Wenatchee and 82% on the Chelan River. Precipitation during March was 121% of normal in the basin and 84% from October 1 to April 1. Reservoir storage in Lake Chelan is 200,600 acre feet or 95% of April 1 average and 16% of capacity.

For more information contact your local Soil Conservation Service office.

WENATCHEE - CHELAN RIVER BASINS

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
CHELAN RIVER at Chelan 1	APR-SEP	1120	95	1180	1070	1250	990	1182
	APR-JUL	985	95	1040	945	1100	870	1040
	APR-JUN	775	95	815	740	920	630	815
STEHEKIN R. at Stehekin	APR-SEP	800	95	840	760	895	705	844
	APR-JUL	675	95	710	645	755	595	714
	APR-JUN	515	95	535	490	575	455	541
ENTIAT RIVER nr Ardenvoir	APR-SEP	210	90	245	177	250	168	233
	APR-JUL	200	90	230	169	240	160	221
	APR-JUN	155	91	179	131	186	124	171
WENATCHEE R. at Peshastin	APR-SEP	1590	95	1670	1360	2110	1070	1678
	APR-JUL	1450	96	1510	1220	1920	980	1516
	APR-JUN	1170	96	1220	975	1550	795	1216
STEMILT nr Wenatchee (miners in)	MAY-SEP	128	93	145	105	172	84	138
ICICLE CREEK nr Leavenworth	APR-SEP	335	91	385	320	455	215	370
	APR-JUL	305	90	355	295	415	196	340
	APR-JUN	245	91	285	235	330	159	270
COLUMBIA R. bl Rock Island Dam 2	APR-SEP	69700	96			79100	60300	72250
	APR-JUL	59300	97			67200	51400	61050
	APR-JUN	46300	97			52500	40100	47730

RESERVOIR STORAGE

(1000AF)

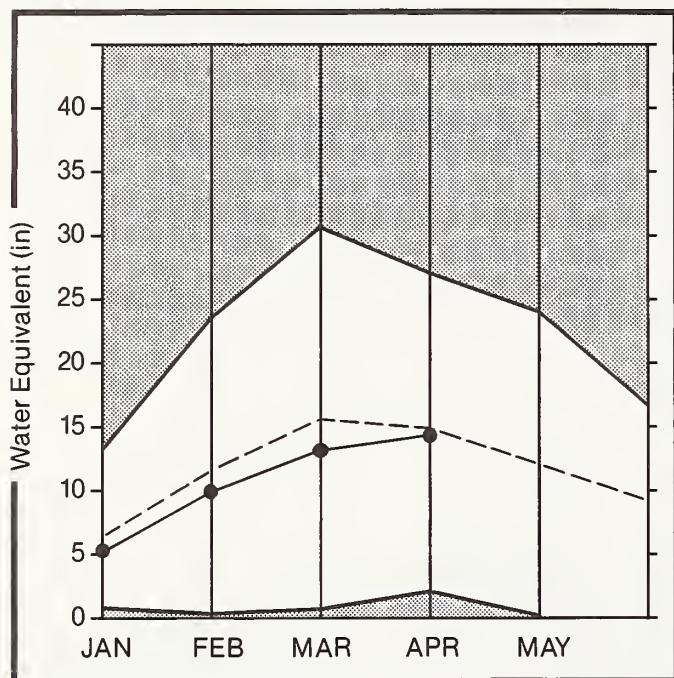
WATERSHED SNOWPACK ANALYSIS

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE	
		THIS YEAR	LAST YEAR	AVG.			LAST YR.	AVERAGE
CHELAN LAKE	676.1	200.6	106.2	212.1	Chelan Lake Basin	4	96	97
					Entiat River	1	94	93
					Wenatchee River	7	100	92
					Colockum Creek	0	0	0
					Squilchuck Creek	1	1030	137
					Stemilt Creek	2	315	105

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YAKIMA

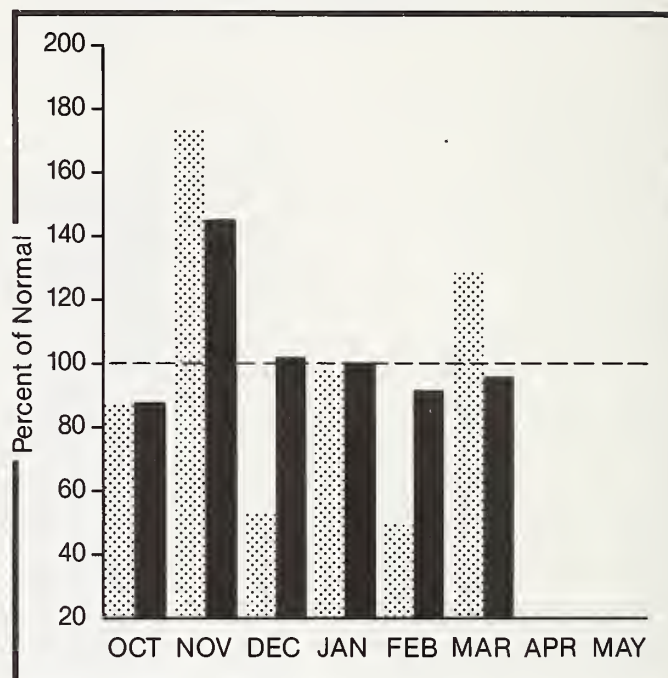
Mountain snowpack* (inches)



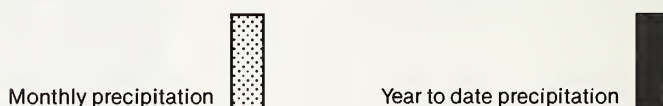
*Based on selected stations



Precipitation* (percent of normal)



*Based on selected stations



YAKIMA RIVER BASIN

WATER SUPPLY OUTLOOK:

March streamflow for the Yakima Basin was 71% of normal. Snowpack is 94% of average in the Yakima Basin based upon 20 snow course and SNOTEL readings. March precipitation was 129% of normal and 95% for the water year-to-date. April 1 reservoir storage for the five major reservoirs was at 605,600 acre feet or 82% of normal, up from 542,600 acre feet last month. Forecasts for the Yakima Basin runoff vary throughout the basin as follows: the Yakima River at Cle Elum 88% up from 86% last month, Naches River 83% up from 79%, the Yakima River at Parker 82% up from 79% and Ahtanum Creek 85%. March temperatures were two degrees below average. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for total water supply available which includes adjustments for reservoir operation and irrigation return flow.

For more information contact your local Soil Conservation Service office.

YAKIMA RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	HIST PROBEABLE (1000AF)	HIST PROBEABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
YAKIMA RIVER at Martin 1	APR-SEP	122	90	133	117	136	108	136
	APR-JUL	113	90	122	108	126	100	126
	APR-JUN	101	90	110	95	112	90	112
YAKIMA RIVER at Cle Elum 2	APR-SEP	840	88	905	775	935	745	951
	APR-JUL	750	89	800	690	835	665	846
	APR-JUN	655	89	700	595	730	580	735
YAKIMA RIVER nr Parker 2	APR-SEP	1710	82	1960	1460	2100	1320	2075
	APR-JUL	1530	82	1750	1310	1880	1180	1862
	APR-JUN	1350	82	1550	1150	1660	1040	1643
KACHESS RIVER nr Easton 1	APR-SEP	114	86	125	102	129	99	133
	APR-JUL	98	86	106	89	111	85	114
	APR-JUN	88	86	95	79	99	77	102
CLE ELUM RIVER nr Roslyn 1	APR-SEP	430	94	460	395	480	360	459
	APR-JUL	390	94	410	360	435	345	417
	APR-JUN	330	93	355	305	370	290	353
BUMPING RIVER nr Mile 1	APR-SEP	123	88	130	116	148	97	138
	APR-JUL	113	88	119	107	136	89	128
	APR-JUN	93	88	99	89	114	72	106
AMERICAN RIVER nr Mile	APR-SEP	107	88	112	102	119	95	121
	APR-JUL	99	88	103	95	110	88	112
	APR-JUN	83	88	87	79	92	74	94
TIETON RIVER at Tieton 1	APR-SEP	205	84	225	183	260	151	244
	APR-JUL	175	84	192	156	220	129	208
	APR-JUN	143	85	155	126	180	106	168
WACHES RIVER nr Waches 2	APR-SEP	710	83	795	650	880	540	860
	APR-JUL	645	83	725	590	800	490	779
	APR-JUN	550	82	615	505	685	415	667
AHANTUM CREEK nr Tappico 2	APR-SEP	42	89	47	33	59	25	47
	APR-JUL	38	88	43	30	53	23	43
	APR-JUN	33	89	37	26	46	19.7	37

RESERVOIR STORAGE

(1000AF)

WATERSHED SNOWPACK ANALYSIS

RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF	
		THIS YEAR	LAST YEAR	AVG.			LAST YR.	AVERAGE
KEECHULUS	157.8	118.6	64.8	110.0	Yakima River	15	118	93
KACHESS	239.0	115.2	71.1	187.0	Ahtanum Creek	2	133	118
CLE ELUM	436.9	249.7	93.3	290.0				
BUMPING LAKE	33.7	11.4	17.7	11.0				
RIMROCK	198.0	110.7	82.0	142.0				

WET SUBS. and DRY SUBS. represent 150 and 50 percent subsequent precipitation events respectively.

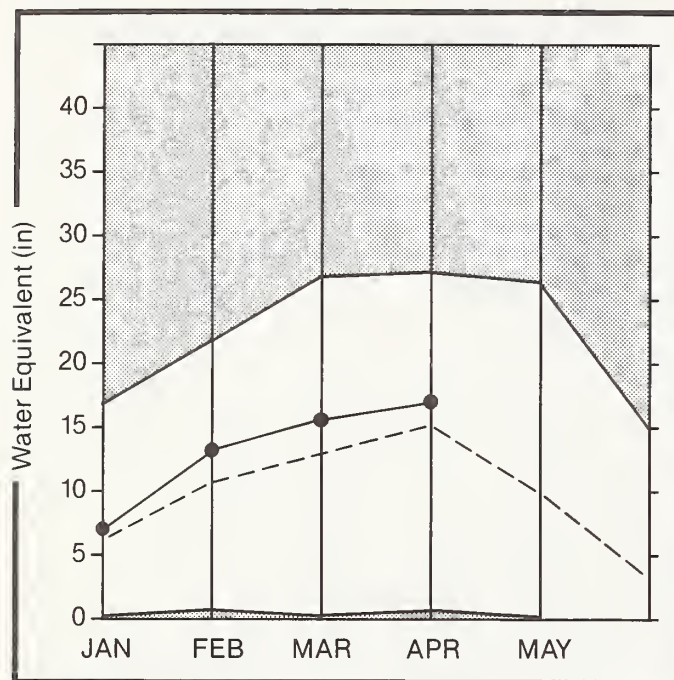
REAS. MAX. and REAS. MIN. forecasts are for 10% and 90% exceedance levels with the exception of (1) below.

(1) - REAS. MAX. and REAS. MIN. forecasts are for 5% and 95% exceedance levels.

(2) - Corrected for upstream diversions or changes in reservoir storage.

WALLA WALLA

Mountain snowpack* (inches)



*Based on selected stations

Maximum



Average



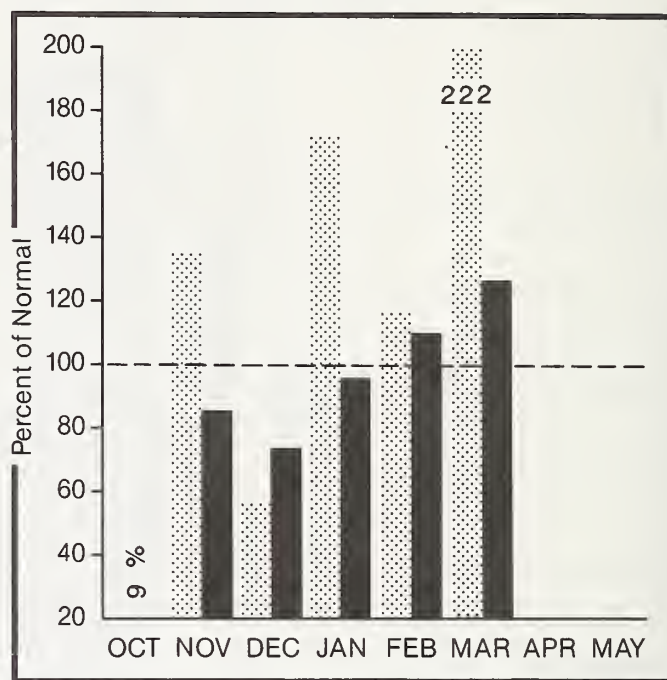
Minimum



Current



Precipitation* (percent of normal)

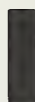


*Based on selected stations

Monthly precipitation



Year to date precipitation



WALLA WALLA RIVER BASIN

WATER SUPPLY OUTLOOK:

The forecast calls for 110% of average streamflow in the Walla Walla River for the coming summer. Streamflow for the Snake River was at 112% of normal for March and 165% on the Walla Walla River. April 1 snowpack in the Walla Walla River Basin is 113% of normal. March precipitation was 222% of average bringing the water year-to-date precipitation to 125% of normal. Water content at the Touchet SNOTEL site was 44.3 inches on April 1 up from 34.8 inches last month. Temperatures were three degrees above average for March.

For more information contact your local Soil Conservation Service office.

WALLA WALLA RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	HIST PROBEABLE (1000AF)	HIST PROBEABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
MILL CREEK at Walla Walla	APR-SEP	19.1	110	20	17.2	23	15.6	17.5
	APR-JUL	19.0	110	19.7	17.1	22	15.5	17.3
	APR-JUN	19.0	111	19.5	16.3	22	15.6	17.1
SF WALLA WALLA nr Milton Freewater	APR-JUL	61	111	69	54	70	52	55
COUSE CK nr Milton Freewater	APR-JUL	3.8	106	4.6	3.0	4.9	2.7	3.6
PINE CREEK nr Weston	APR-JUL	3.0	111	3.4	2.6	3.8	2.2	2.7
COLUMBIA R. at The Dalles 2	APR-SEP	98600	95			112000	86000	102000
	APR-JUL	83300	96			94600	72000	87100
	APR-JUN	67600	96			76800	58400	70470

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
		THIS YEAR	LAST YEAR	AVG.			
					Mill Creek	1	183 113

WET SUBS. and DRY SUBS. represent 150 and 50 percent subsequent precipitation events respectively.

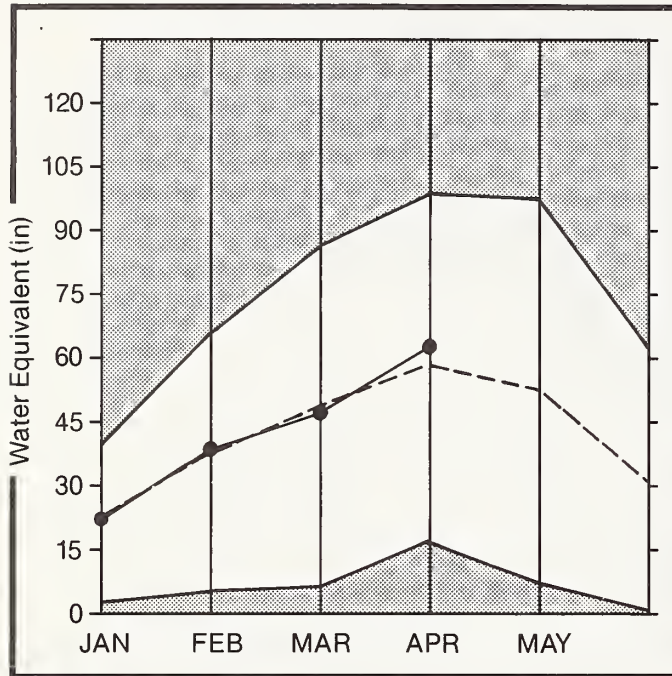
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(2) - Corrected for upstream diversions or changes in reservoir storage.

COWLITZ AND LEWIS

Mountain snowpack* (inches)



*Based on selected stations

Maximum



Average

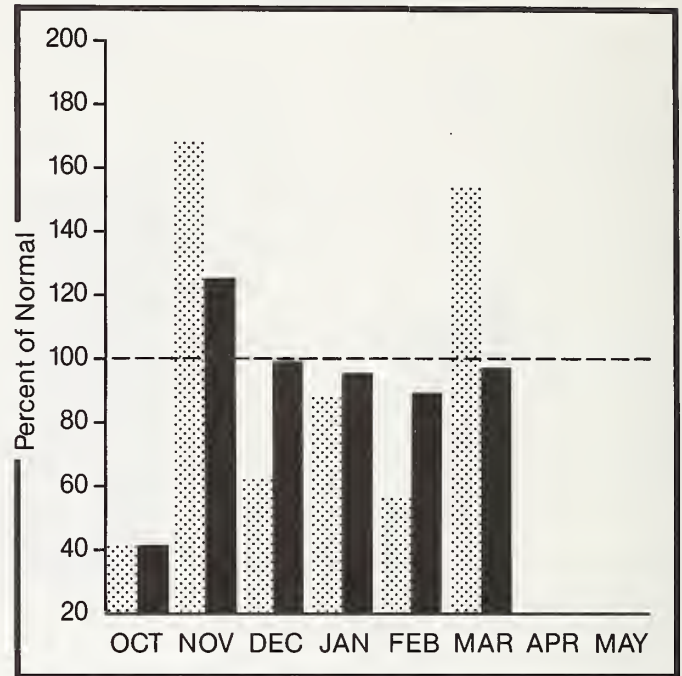


Minimum

Current



Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation



Year to date precipitation



COWLITZ - LEWIS RIVER BASINS

WATER SUPPLY OUTLOOK:

March precipitation was 154% of normal bringing the water year-to-date precipitation to 97% of average. April 1 snow cover for the Cowlitz-Lewis Basin is 109% of normal. The Paradise Park SNOTEL site has the maximum water content for the basin with 82.9 inches of water on April 1. Summer runoff forecasts for the Lewis River are 117% and for the Cowlitz River 99%. Temperatures were normal for March.

For more information contact your local Soil Conservation Service office.

COWLITZ - LEWIS RIVER BASINS

STREAMFLOW FORECASTS

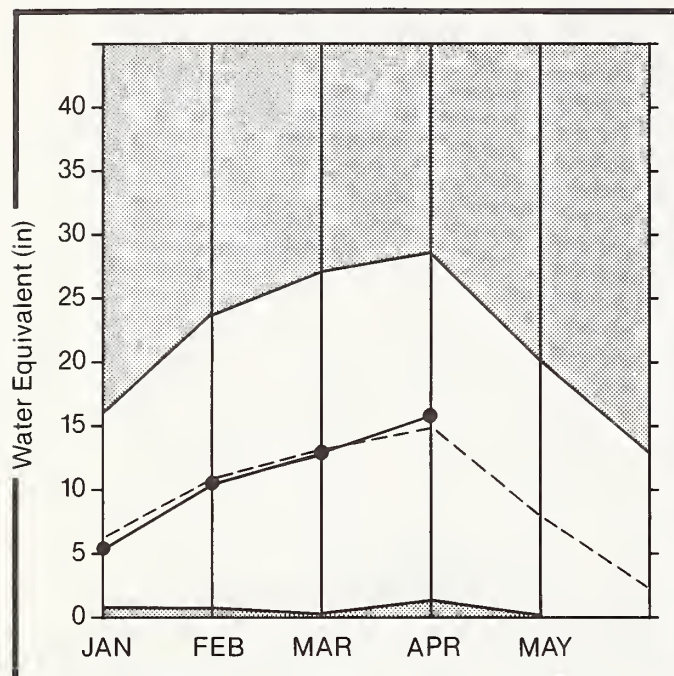
FORECAST POINT	FORECAST PERIOD	HIST PROBABLE (1000AF)	HIST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
LEWIS RIVER at Ariel 2	APR-SEP	1460	117	1560	1250	1800	1120	1244
	APR-JUL	1270	117	1360	1090	1560	975	1084
	APR-JUN	1120	117	1200	965	1380	860	958
COWLITZ R. bl Mayfield Dam 2	APR-SEP	2010	99	2340	1640	2800	1220	2036
	APR-JUL	1760	99	2050	1440	2450	1070	1782
	APR-JUN	1510	99	1740	1220	2100	915	1524
COWLITZ R. at Castle Rock 2	APR-SEP	2570	96	2950	2170	3540	1600	2687
	APR-JUL	2240	96	2570	1890	3080	1400	2343
	APR-JUN	1940	96	2200	1620	2670	1210	2015

RESERVOIR STORAGE (1000AF)		WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE ** THIS YEAR LAST YEAR AVG.	WATERSHED	NO. COURSES AVG'D THIS YEAR AS % OF LAST YR. AVERAGE
			Cowlitz River	2 136 98
			Lewis River	3 147 138

WET SUBS. and DRY SUBS. represent 150 and 50 percent subsequent precipitation events respectively.
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WHITE - GREEN

Mountain snowpack* (inches)

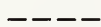


*Based on selected stations

Maximum



Average



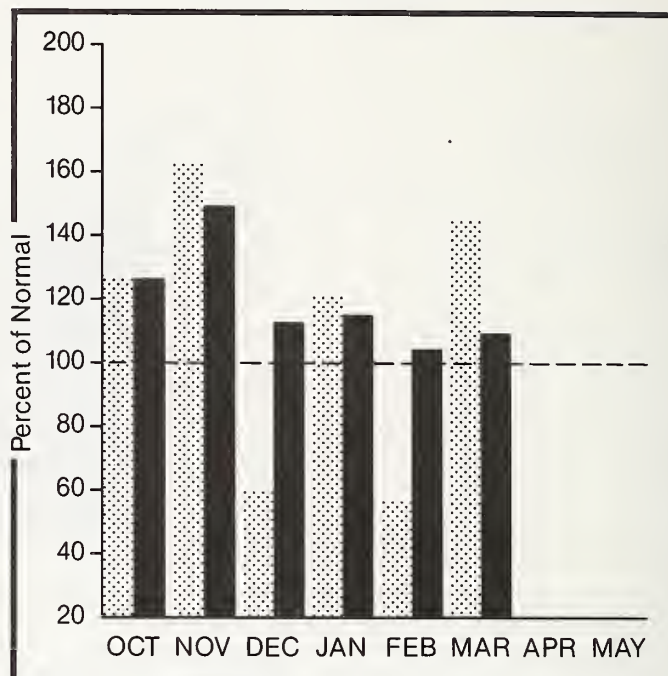
Minimum



Current



Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation



Year to date precipitation



WHITE - GREEN RIVER BASINS

WATER SUPPLY OUTLOOK:

March precipitation was 143% of normal bringing the water year-to-date to 109% of average. April 1 snowpack is 105% of normal for the basin, up from 98% last month. Summer runoff is forecasted to be 101% on the Green River and 100% of normal and Cedar River. Snow water content at the Stampede Pass SNOTEL was 48.8 inches of water content on April 1. Temperatures were four degrees below average for March.

For more information contact your local Soil Conservation Service office.

WHITE - GREEN RIVER BASINS

STREAMFLOW FORECASTS

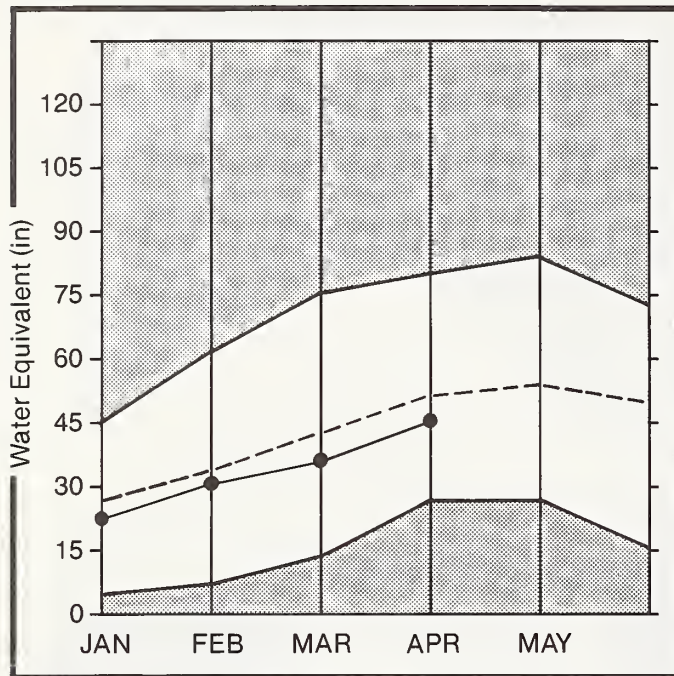
FORECAST POINT	FORECAST PERIOD	HIST PROBABLE (1000AF)	HIST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
GREEN RIVER b1 Howard Hanson Dam 2	APR-SEP	295	101	300	285	355	235	291
	APR-JUL	285	102	270	255	315	215	261
	APR-JUN	240	102	285	190	285	193	236
CEDAR RIVER nr Cedar Falls	APR-SEP	93	100	101	89	112	74	93

RESERVOIR STORAGE		(1000AF)		WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **	THIS YEAR	LAST YEAR	AVG.	WATERSHED
						NO. COURSES AVG'D
						THIS YEAR AS % OF LAST YR. AVERAGE
						White River
						2 132 103
						Green River
						5 121 116
						Cedar River
						2 187 123

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NORTH PUGET SOUND

Mountain snowpack* (inches)



*Based on selected stations

Maximum



Average



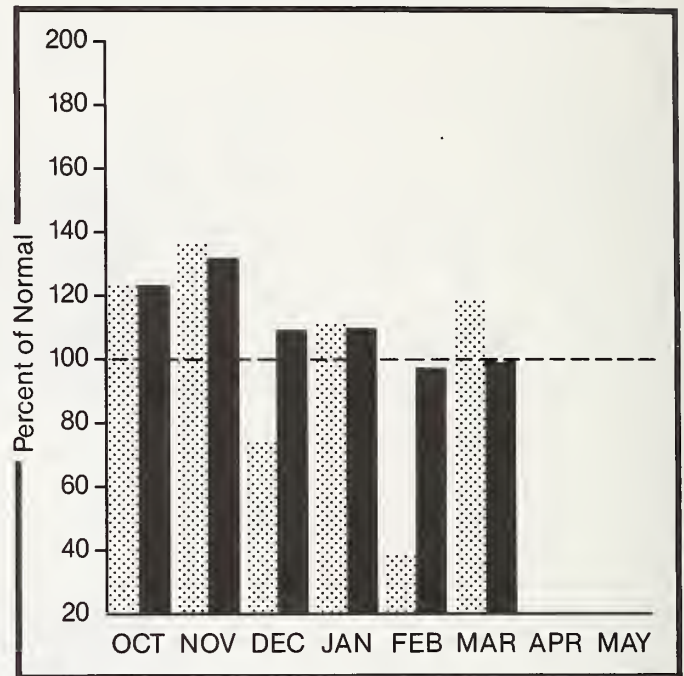
Minimum



Current



Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation



Year to date precipitation



NORTH PUGET SOUND RIVER BASIN

WATER SUPPLY OUTLOOK:

April 1 Reservoir storage was above average, with Ross Lake at 703,900 acre feet, 236% of normal and 50% of capacity. Precipitation values for March were 118% of average with a water year-to-date at 99% of normal. March temperatures were average. Streamflow on the Skaquit River during March was 66% of normal. Runoff for the Skaquit River is forecasted to be 88% of normal, up from 83% last month. Snow cover for April 1 in the basin is 86% of normal, with Rainy Pass snow course, at 4780 feet, having 90 inches of snow and 33.8 inches of water content.

For more information contact your local Soil Conservation Service office.

NORTH PUGET SOUND RIVER BASINS

STREAMFLOW FORECASTS

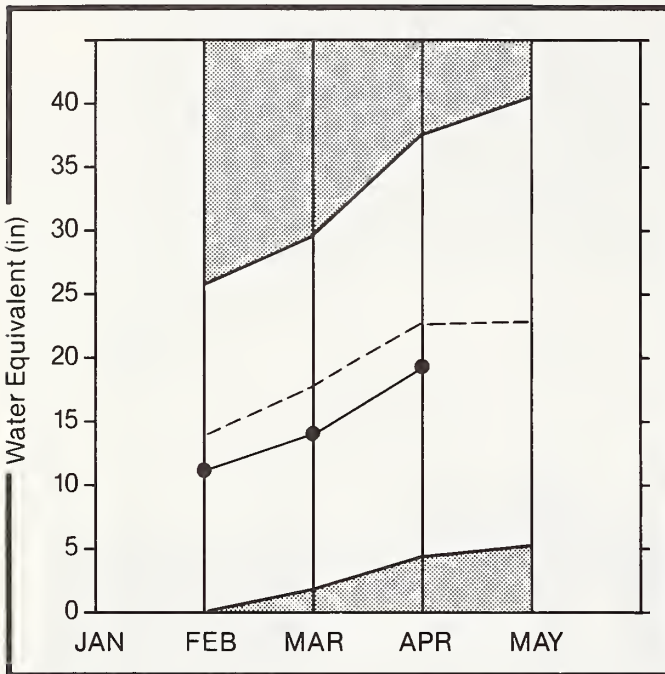
FORECAST POINT	FORECAST PERIOD	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
SKAGIT RIVER at Newhalem 2	APR-SEP	1990	88			2350	1630	2264
	APR-JUL	1660	88			1960	1360	1891
	APR-JUN	1280	89			1510	1050	1442

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
		THIS YEAR	LAST YEAR	AVG.			
ROSS	1404.1	703.9	466.0	298.0	Skagit River	12	101 86
DIABLO RESERVOIR	90.6	86.6	85.0	---	Baker River	0	0 0
GORGE RESERVOIR	9.8	7.6	8.2	---	Snoqualmie River	2	115 95
					Skykomish River	2	97 104

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OLYMPIC

Mountain snowpack* (inches)



*Based on selected stations

Maximum



Average

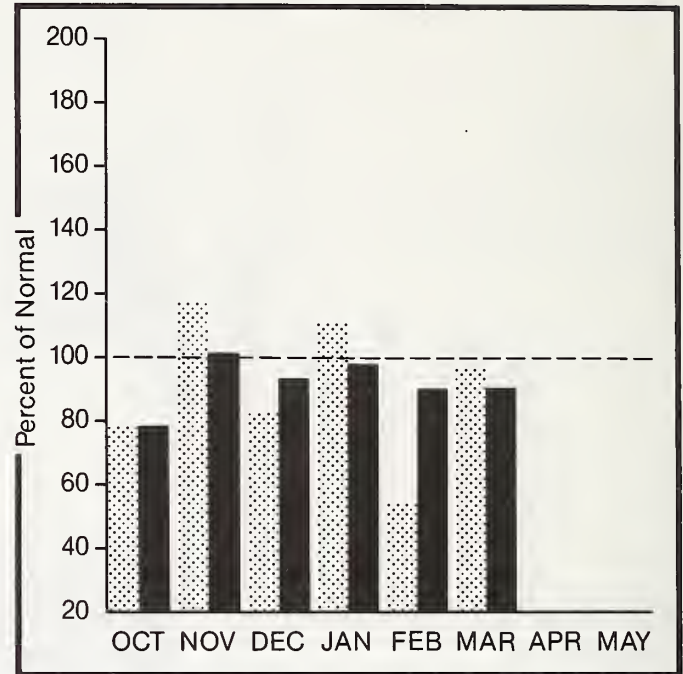
Minimum



Current



Precipitation* (percent of normal)



*Based on selected stations

Monthly precipitation



Year to date precipitation



OLYMPIC PENINSULA RIVER BASIN

WATER SUPPLY OUTLOOK:

The April 1 snow cover remained 77% of normal for the Dungeness River and improved to 86% for the Elwha. Forecasts of runoff for streamflow in the basin are for 88% of average on the Dungeness River, down from 84% last month and 90% for the Elwha River. The maximum recorded snowpack was at the Cox Valley snow course where 99 inches of snow contained 36.0 inches of water. Average water content at this site is 40.0 inches for April 1. March precipitation was 97% of average, with the Quillayute weather service office recording 10.03 inches of precipitation during March. The water year-to-date precipitation accumulation is 90% of normal. Temperatures were normal for March.

For more information contact your local Soil Conservation Service office.

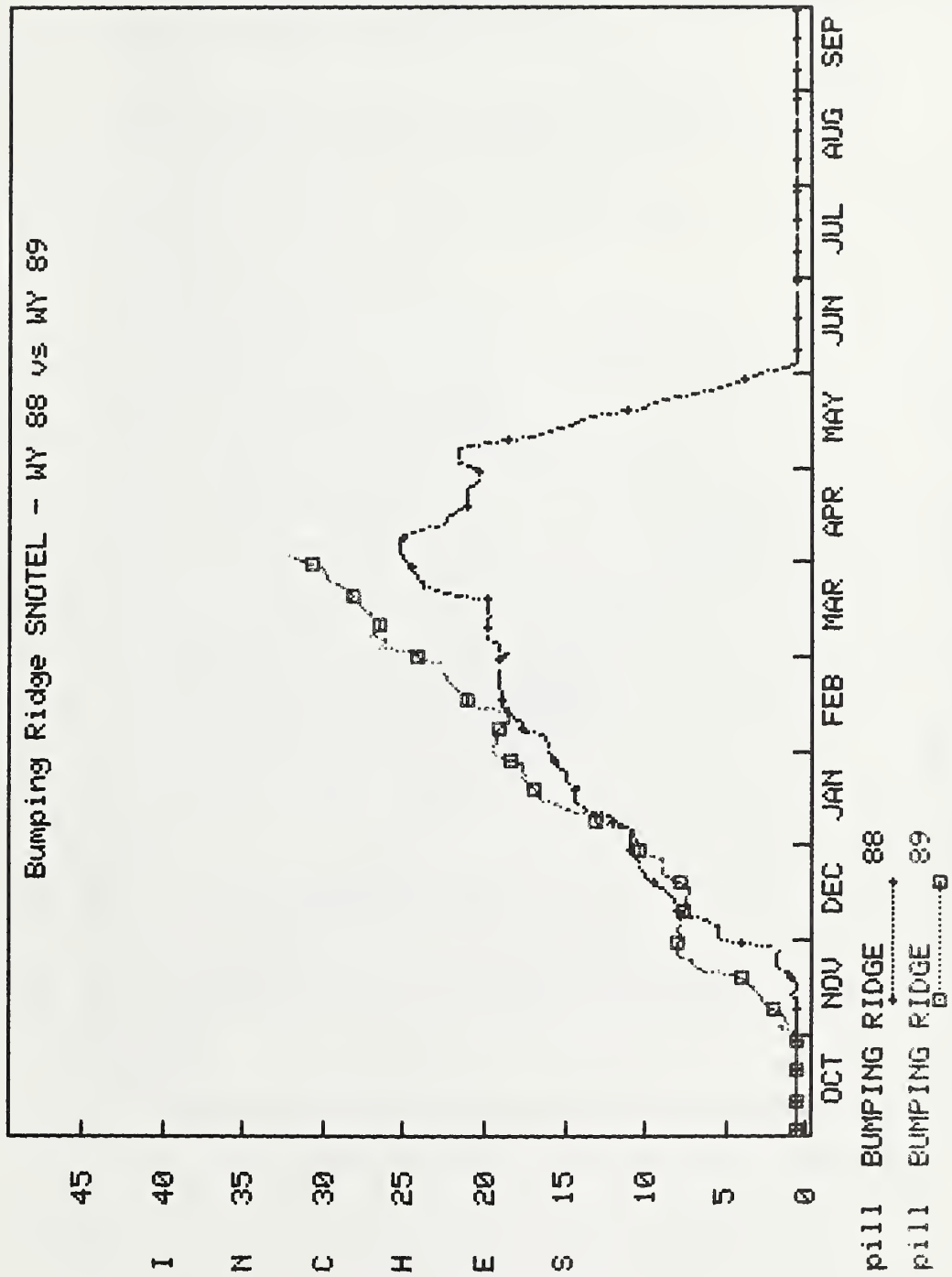
OLYMPIC PENINSULA RIVER BASINS

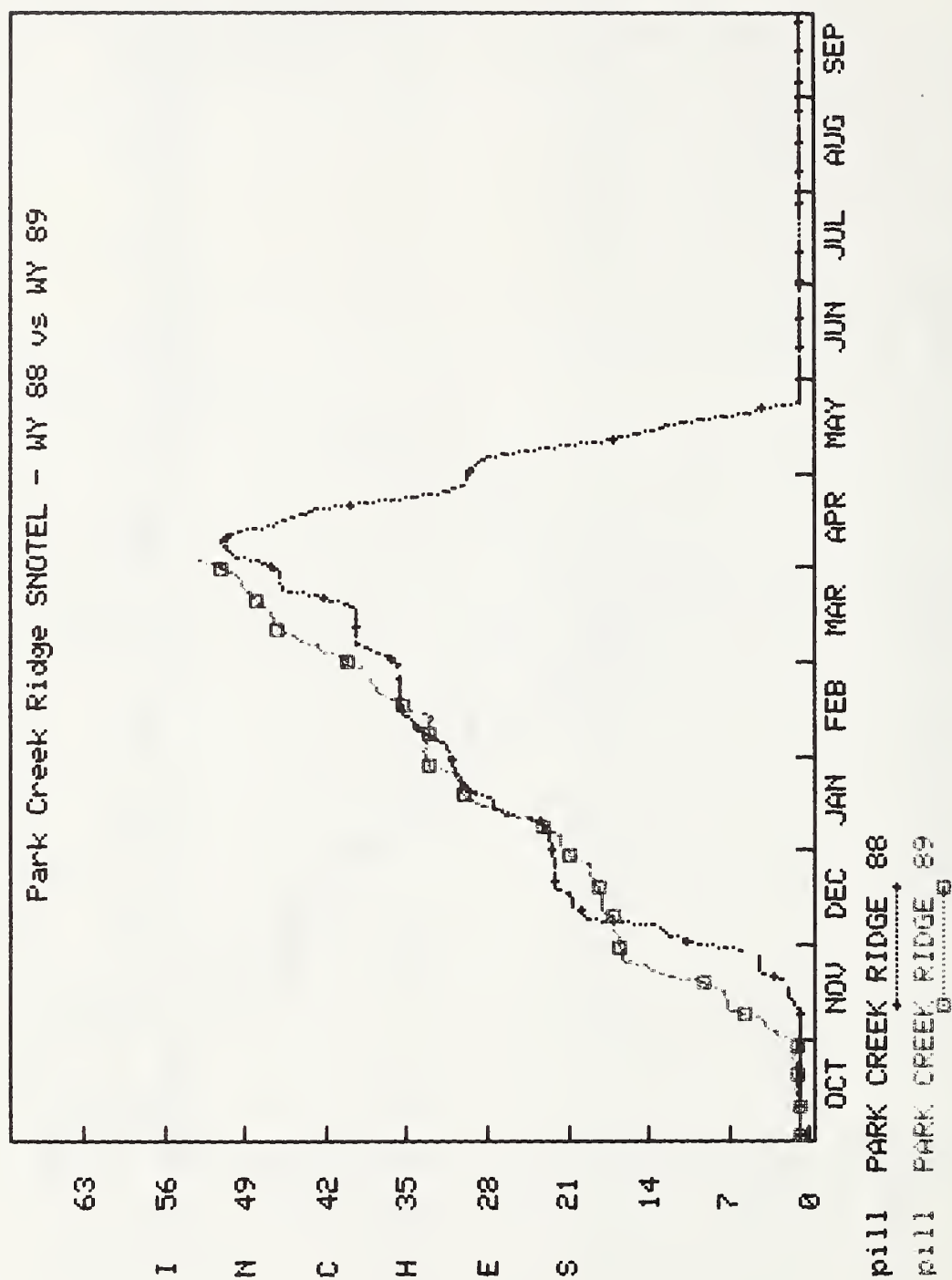
STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	MOST PROBABLE (1000AF)	MOST PROBABLE (% AVG.)	WET SUBS. (1000AF)	DRY SUBS. (1000AF)	REAS. MAX. (1000AF)	REAS. MIN. (1000AF)	25 YR. AVG. (1000AF)
DUNGENESS RIVER nr Sequim	APR-SEP	140	88	151	129	165	115	159
	APR-JUL	114	88	124	104	135	93	129
	APR-JUN	85	88	92	79	101	69	97
ELWHA RIVER nr Port Angeles	APR-SEP	495	90	540	475	585	405	553
	APR-JUL	415	91	440	390	490	340	454

RESERVOIR STORAGE (1000AF)					WATERSHED SNOWPACK ANALYSIS		
RESERVOIR	USEABLE CAPACITY	** USEABLE STORAGE **			WATERSHED	NO. COURSES AVG'D	THIS YEAR AS % OF LAST YR. AVERAGE
	I	THIS YEAR	LAST YEAR	AVG.			
					Dungeness River	1	82 77
					Horse Creek	1	77 90
					Elwha River	1	87 86

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The Following Organizations Cooperate With The Soil Conservation Service In Snow Survey Work

- Canada:** Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia
- States:** Washington State Department of Ecology
Washington State Department of Natural Resources
- Federal:** Department of the Army
Corps of Engineers
U.S. Department of Agriculture
Forest Service
U.S. Department of Commerce
NOAA, National Weather Service
U.S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service
Bureau of Indian Affairs
- Local:** City of Tacoma
City of Seattle
Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company
Snohomish County P.U.D.
Colville Confederated Tribes
Spokane County
- Private:** Okanogan Irrigation District
Wenatchee Heights Irrigation District
Newman Lake Homeowners Association

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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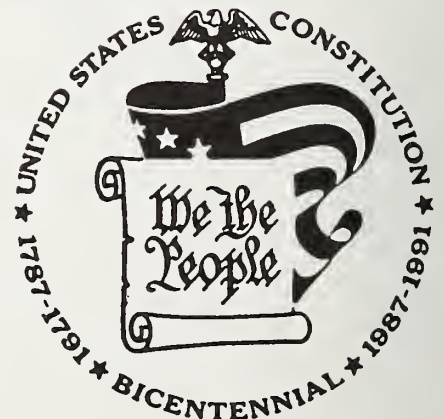
**Washington
Water Supply Outlook**

and

Federal — State — Private
Cooperative Snow Surveys



SOIL CONSERVATION SERVICE



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